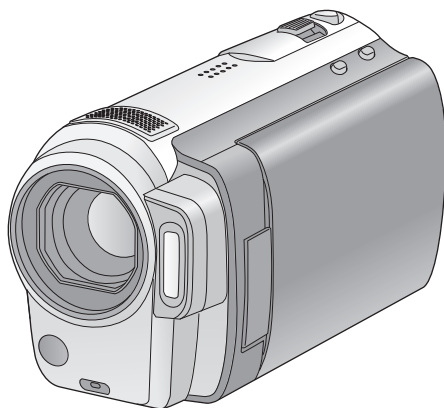


Panasonic®

Operating Instructions High Definition Video Camera

Model No. **HDC-SD10**
HDC-TM10



Before use, please read these instructions completely.

Please also refer to Operating Instructions (PDF format) recorded on the CD-ROM containing the Operating Instructions (supplied).

You can learn about advanced operation methods and check the Troubleshooting.



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SD
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Information for Your Safety

WARNING:

TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK OR PRODUCT DAMAGE,

- **DO NOT EXPOSE THIS APPARATUS TO RAIN, MOISTURE, DRIPPING OR SPLASHING AND THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHALL BE PLACED ON THE APPARATUS.**
- **USE ONLY THE RECOMMENDED ACCESSORIES.**
- **DO NOT REMOVE THE COVER (OR BACK); THERE ARE NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**

CAUTION!

- **DO NOT INSTALL OR PLACE THIS UNIT IN A BOOKCASE, BUILT-IN CABINET OR IN ANOTHER CONFINED SPACE. ENSURE THE UNIT IS WELL VENTILATED. TO PREVENT RISK OF ELECTRIC SHOCK OR FIRE HAZARD DUE TO OVERHEATING, ENSURE THAT CURTAINS AND ANY OTHER MATERIALS DO NOT OBSTRUCT THE VENTILATION VENTS.**
- **DO NOT OBSTRUCT THE UNIT'S VENTILATION OPENINGS WITH NEWSPAPERS, TABLECLOTHS, CURTAINS, AND SIMILAR ITEMS.**
- **DO NOT PLACE SOURCES OF NAKED FLAMES, SUCH AS LIGHTED CANDLES, ON THE UNIT.**
- **DISPOSE OF BATTERIES IN AN ENVIRONMENTALLY FRIENDLY MANNER.**

The socket outlet shall be installed near the equipment and easily accessible.
The mains plug of the power supply cord shall remain readily operable.
To completely disconnect this apparatus from the AC Mains, disconnect the power supply cord plug from AC receptacle.

■ **Concerning the battery**

Warning

Risk of fire, explosion and burns. Do not disassemble, heat above 60 °C or incinerate.

CAUTION

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

■ **EMC Electric and magnetic compatibility**

This symbol (CE) is located on the rating plate.

Use only the recommended accessories.

- Do not use any other AV cables, Component cable and USB cables except the supplied one.
- When you use the cable which are sold separately, please make sure to use the one whose length is less than 3 metres.
- Keep the Memory Card out of reach of children to prevent swallowing.

■ **Concerning the AC adaptor**

Product Identification Marking is located on the bottom of unit.

■ Information for Users on Collection and Disposal of Old Equipment and used Batteries



These symbols on the products, packaging, and/or accompanying documents mean that used electrical and electronic products and batteries should not be mixed with general household waste. For proper treatment, recovery and recycling of old products and

used batteries, please take them to applicable collection points, in accordance with your national legislation and the Directives 2002/96/EC and 2006/66/EC.

By disposing of these products and batteries correctly, you will help to save valuable resources and prevent any potential negative effects on human health and the environment which could otherwise arise from inappropriate waste handling.

For more information about collection and recycling of old products and batteries, please contact your local municipality, your waste disposal service or the point of sale where you purchased the items.

Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.



■ For business users in the European Union

If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

[Information on Disposal in other Countries outside the European Union]

These symbols are only valid in the European Union. If you wish to discard these items, please contact your local authorities or dealer and ask for the correct method of disposal.



Cd

■ Note for the battery symbol (bottom two symbol examples):

This symbol might be used in combination with a chemical symbol. In this case it complies with the requirement set by the Directive for the chemical involved.

■ Caution for use

Keep the High Definition Video Camera as far away as possible from electromagnetic equipment (such as microwave ovens, TVs, video games etc.).

- If you use the High Definition Video Camera on top of or near a TV, the pictures and sound on the High Definition Video Camera may be disrupted by electromagnetic wave radiation.
- Do not use the High Definition Video Camera near cell phones because doing so may result in noise adversely affecting the pictures and sound.
- Recorded data may be damaged, or pictures may be distorted, by strong magnetic fields created by speakers or large motors.
- Electromagnetic wave radiation generated by microprocessors may adversely affect the High Definition Video Camera, disturbing the pictures and sound.
- If the High Definition Video Camera is adversely affected by electromagnetic equipment and stops functioning properly, turn the High Definition Video Camera off and remove the battery or disconnect AC adaptor. Then reinsert the battery or reconnect AC adaptor and turn the High Definition Video Camera on.

Do not use the High Definition Video Camera near radio transmitters or high-voltage lines.

- If you record near radio transmitters or high-voltage lines, the recorded pictures and sound may be adversely affected.

■ About connecting to a PC or a printer

- Do not use any other USB cables except the supplied one.

■ Indemnity concerning recording content

The manufacturer shall in no event be liable for the loss of recordings due to malfunction or defect of this unit, its accessories or recordable media.

■ Carefully observe copyright laws

Recording of pre-recorded tapes or discs or other published or broadcast material for purposes other than your own private use may infringe copyright laws. Even for the purpose of private use, recording of certain material may be restricted.

These operating instructions are designed for use with models **HDC-SD10** and **HDC-TM10**. Pictures may be slightly different from the original.

- **HDC-TM10** is not available in some countries.
- The illustrations used in these operating instructions show model **HDC-SD10**, however, parts of the explanation refer to different models.
- Depending on the model, some functions are not available.
- Features may vary, so please read carefully.

■ Cards that you can use with this unit

SD Memory Card and SDHC Memory Card

- 4 GB or more Memory Cards that do not have the SDHC logo are not based on SD Memory Card Specifications.
- Refer to page 14 for more details on SD cards.

■ For the purposes of these operating instructions

- SD Memory Card and SDHC Memory Card are referred to as the "SD card".
- Functions that can be used for motion picture recording/motion picture playback are indicated by **VIDEO** in these operating instructions.
- Functions that can be used for still picture recording/still picture playback are indicated by **PHOTO** in these operating instructions.
- Pages for reference are indicated by an arrow, for example: → 00

■ Licenses

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Dolby and the double-D symbol are trademarks of Dolby Laboratories.
- HDMI, the HDMI Logo and the High-Definition Multimedia Interface are the registered trademarks or trademarks of HDMI Licensing LLC.
- HDAVI Control™ is a trademark of Panasonic Corporation.

- "x.v.Colour" is trademark.
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- AMD Athlon™ is a trademark of the Advanced Micro Devices, Inc.
- iMovie and Mac are trademarks of Apple Inc., registered in the U.S. and other countries.
- PowerPC is a trademark of International Business Machines Corporation.
- Other names of systems and products mentioned in these instructions are usually the registered trademarks or trademarks of the manufacturers who developed the system or product concerned.

This product is licensed under the AVC patent portfolio license for the personal and non-commercial use of a consumer to (i) encode video in compliance with the AVC Standard ("AVC Video") and/or (ii) decode AVC Video that was encoded by a consumer engaged in a personal and non-commercial activity and/or was obtained from a video provider licensed to provide AVC Video. No license is granted or shall be implied for any other use. Additional information may be obtained from MPEG LA, LLC. See <http://www.mpegla.com>.

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Accessories

Check the accessories before using this unit.

Battery pack

VW-VBG070



AC adaptor

VSK0698



AC cable

K2CQ2CA00006



DC cable

K2GJ2DC00022



AV cable

K2KYYYY00054 or
K2KC4CB00027



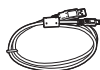
Component cable

K1HY10YY0005 or
K1HY10YY0009



USB cable

K1HY04YY0032



Stylus pen

VFC4394



CD-ROM

Software



CD-ROM

Operating Instructions
VFF0513



Optional accessories

Some optional accessories may not be available in some countries.

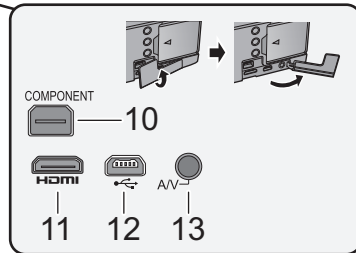
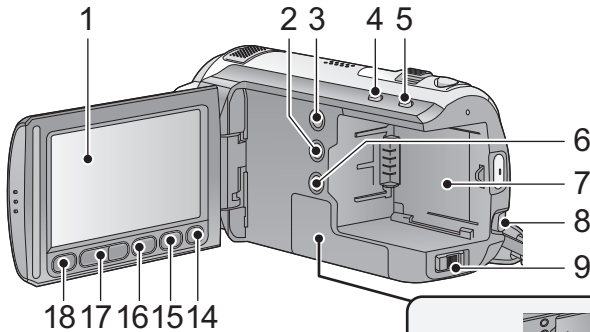
AC adaptor (VW-AD21E-K)*1
Battery pack (lithium/VW-VBG070)
Battery pack (lithium/VW-VBG130)
Battery pack (lithium/VW-VBG260)*2
Battery pack (lithium/VW-VBG6)*2
Battery pack holder kit (VW-VH04)
HDMI mini cable (RP-CDHM15, RP-CDHM30)
DVD burner (VW-BN1/VW-BN2)

*1 The supplied DC cables cannot be used on this unit.

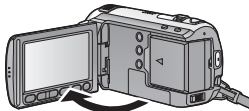
*2 The battery pack holder kit VW-VH04 (optional) is necessary.

1

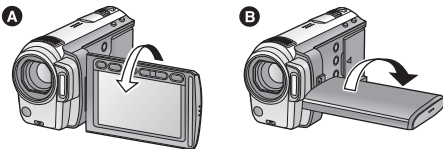
Parts identification and handling



1 LCD monitor (Touch screen) (→ 18)



- It can open up to 90°.

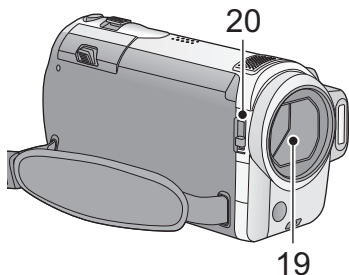


- It can rotate up to 180° **A** towards the lens or 90° **B** towards the opposite direction.

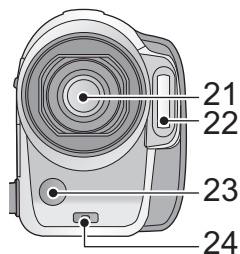
Due to limitations in LCD production technology, there may be some tiny bright or dark spots on the LCD monitor screen. However, this is not a malfunction and does not affect the recorded picture.

2 Manual button [MANUAL]

- 3 **PRE-REC button [PRE-REC]**
- 4 **Intelligent auto button [iA] (→ 21)**
- 5 **Optical image stabilizer button [(O.I.S.)/O.I.S.] (→ 25)**
- 6 **Power button [⏻/⏷] (→ 16)**
- 7 **Battery holder (→ 11)**
- 8 **Battery release lever [BATT] (→ 11)**
- 9 **Mode switch (→ 17)**
- 10 **Component terminal [COMPONENT] (→ 30)**
- 11 **HDMI mini connector [HDMI] (→ 30)**
- 12 **USB terminal [↔] (→ 30)**
- 13 **Audio-video output terminal [A/V] (→ 30)**
 - Use the AV cable (only the supplied cable).
- 14 **Delete button [⏮] (→ 28)**
- 15 **Video light button [LIGHT]**
- 16 **Menu button [MENU] (→ 19)**
- 17 **Adjust zoom buttons (→ 24)**
 - These buttons function in the same manner as the zoom lever. Changing the thumbnail display and adjusting the volume can be operated.
- 18 **Sub recording start/stop button**
 - This button functions in the same manner as the recording start/stop button.



- Slide the opening/closing switch to open/close the cover.



19 Lens cover

20 Lens cover opening/closing switch

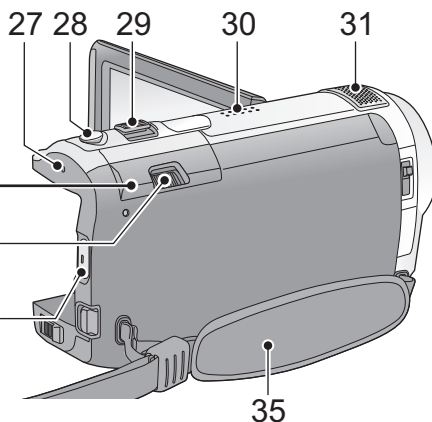
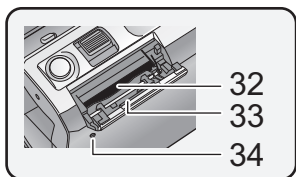
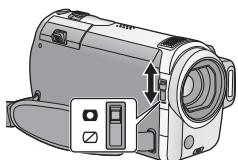
When not using the unit, close the lens cover to protect the lens.

21 Lens

22 Built-in flash

23 Video light

24 Recording lamp



25 Recording start/stop button (→ 22)

26 SD card open lever [OPEN] (→ 15)

27 Status indicator (→ 16)

28 Photoshot button [] (→ 23)

29 Zoom lever [W/T] (In recording mode) (→ 24)

Thumbnail display switch/Volume lever [- /VOL+] (In playback mode)

30 Speaker

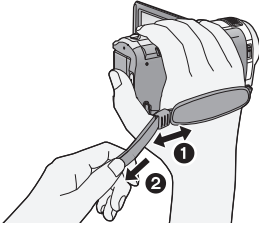
31 Internal stereo microphones

32 Card slot (→ 15)

33 SD card cover (→ 15)

34 Access lamp [ACCESS] (→ 15)

35 Grip belt

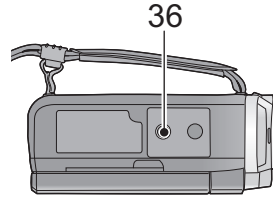


- ❶ Adjust the length to fit your hand.
- ❷ Pull to adjust the length.

When carrying the unit with your hand down

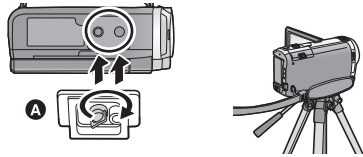


Pass your hand through the strap part.



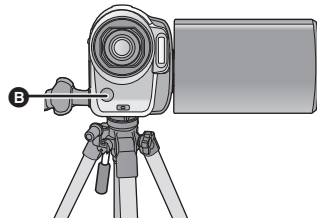
36 Tripod receptacle

This is a hole for attaching the unit to the optional tripod. (For details on mounting the tripod, refer to the operating instructions for the tripod.)



A Camera base

Be sure that the grip belt stays clear of the video light **B** when the tripod is used as shown below.



■ About batteries that you can use with this unit

The battery that can be used with this unit is VW-VBG070/VW-VBG130/VW-VBG260/VW-VBG6.

- This unit has a function to distinguish the batteries that can be used, and the batteries (VW-VBG070/VW-VBG130/VW-VBG260/VW-VBG6) are compatible with this function. (The batteries that are not compatible to this function cannot be used.)
- To use the VW-VBG260/VW-VBG6 for this unit, the battery pack holder kit VW-VH04 (optional) is required.

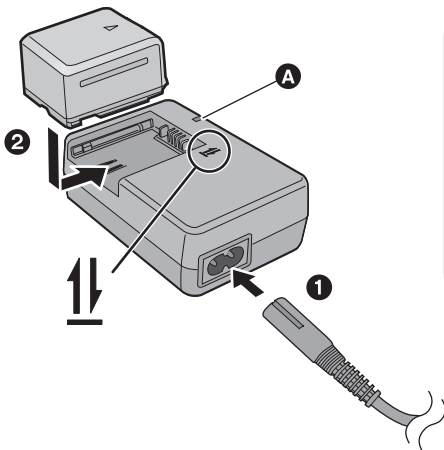
It has been found that counterfeit battery packs which look very similar to the genuine product are made available to purchase in some markets. Some of these battery packs are not adequately protected with internal protection to meet the requirements of appropriate safety standards. There is a possibility that these battery packs may lead to fire or explosion. Please be advised that we are not liable for any accident or failure occurring as a result of use of a counterfeit battery pack. To ensure that safe products are used we would recommend that a genuine Panasonic battery pack is used.

Charging the battery

When this unit is purchased, the battery is not charged. Charge the battery before using this unit.

Important:

If the DC cable is connected to the AC adaptor, then the battery will not charge. Remove the DC cable from the AC adaptor.



Charging lamp [CHARGE] A

Lights up:

Charging (Battery charging time: → 12)

Goes off:

Charging completed

Flashing:

Make sure that the terminals of the battery or the AC adaptor are not exposed to dirt, foreign objects or dust, then reconnect them properly.

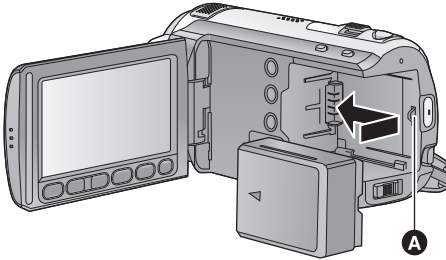
1 Connect the AC cable to the AC adaptor and the AC outlet.

2 Insert the battery into the AC adaptor by aligning the arrows.

- We recommend using Panasonic batteries (→ 6, 12).
- If you use other batteries, we cannot guarantee the quality of this product.
- Do not heat or expose to flame.
- Do not leave the battery(ies) in an automobile exposed to direct sunlight for a long period of time with doors and windows closed.

Inserting/removing the battery

Open the LCD monitor and install the battery by inserting it in the direction shown in the figure.

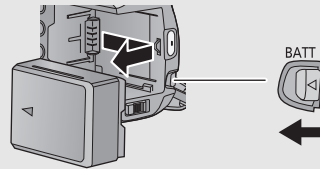


A Insert the battery until it clicks and locks.

Removing the battery

Be sure to hold down the power button until the status indicator goes off. Then remove the battery while supporting the unit to prevent it dropping.

Move the BATTERY lever in the direction indicated by the arrow and remove the battery when unlocked.



CAUTION

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Charging and recording time

■ Charging/Recording time

- Temperature: 25 °C/humidity: 60%

HDC-SD10			
Battery model number [Voltage/Capacity (minimum)]	Charging time	Maximum continuously recordable time	Actual recordable time
Supplied battery/ VW-VBG070 (optional) [7.2 V/725 mAh]	1 h 35 min	1 h 25 min	50 min
VW-VBG130 (optional) [7.2 V/1250 mAh]	2 h 35 min	2 h 25 min	1 h 30 min
VW-VBG260 (optional)* [7.2 V/2500 mAh]	4 h 40 min	4 h 35 min	2 h 50 min
VW-VBG6 (optional)* [7.2 V/5400 mAh]	9 h 25 min	11 h 25 min	7 h 5 min




HDC-TM10			
Battery model number [Voltage/Capacity (minimum)]	Charging time	Maximum continuously recordable time	Actual recordable time
Supplied battery/ VW-VBG070 (optional) [7.2 V/725 mAh]	1 h 35 min	1 h 25 min	50 min
VW-VBG130 (optional) [7.2 V/1250 mAh]	2 h 35 min	2 h 20 min	1 h 25 min
VW-VBG260 (optional)* [7.2 V/2500 mAh]	4 h 40 min	4 h 30 min	2 h 50 min
VW-VBG6 (optional)* [7.2 V/5400 mAh]	9 h 25 min	11 h 15 min	6 h 55 min

* The battery pack holder kit VW-VH04 (optional) is necessary.

- These times are approximations.
- **The indicated charging time is for when the battery has been discharged completely. Charging time and recordable time vary depending on the usage conditions such as high/low temperature.**

-
- The actual recordable time refers to the recordable time when repeatedly starting/stopping recording, turning the unit on/off, moving the zoom lever etc.
 - The batteries heat up after use or charging. This is not a malfunction.

Battery capacity indication

- The display changes as the battery capacity reduces.  If there is less than 3 minutes remaining, then  will become red. If the battery discharges, then () will flash.
- The remaining battery capacity is displayed when using the Panasonic battery that you can use for this unit. It may take time to display the remaining battery capacity. The actual time can vary depending on your actual use.
- The maximum amount of remaining battery capacity able to be indicated is 9 hours 59 minutes. If the actual remaining time exceeds 9 hours 59 minutes, the indication will stay green and will not change until the remaining time falls below 9 hours 59 minutes.
- When changing modes, the time indication will turn off momentarily in order to recalculate the remaining battery capacity time.
- When using the AC adaptor or batteries made by other companies, the remaining battery capacity will not be shown.

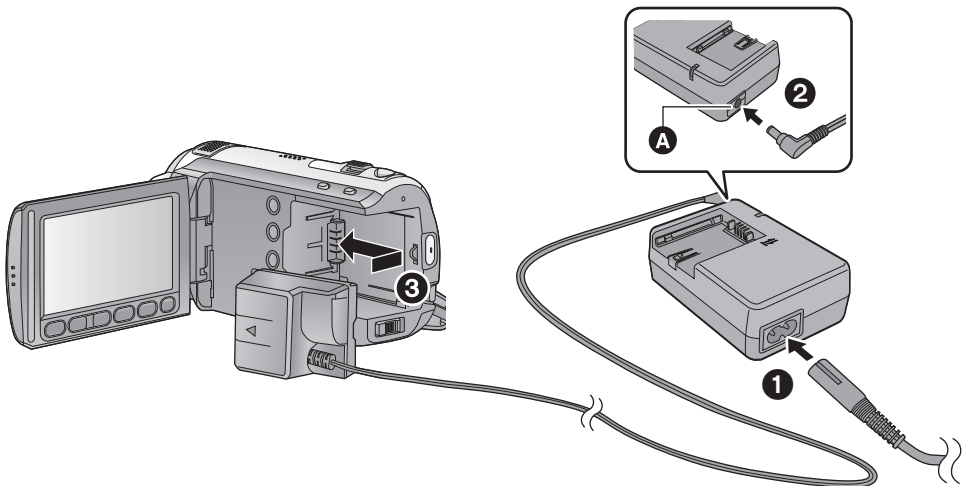
Connecting to the AC outlet

The unit is in the standby condition when the AC adaptor is connected. The primary circuit is always "live" as long as the AC adaptor is connected to an electrical outlet.

Important:

While the DC cable is connected to the AC adaptor, the battery will not charge.

- **Do not use the AC cable with any other equipment as it is designed only for this unit. Also, do not use the AC cable from other equipment with this unit.**



A DC output terminal

1 Connect the AC cable to the AC adaptor and the AC outlet.

2 Connect the DC cable to the AC adaptor.

3 Insert the DC cable.

- Always use the supplied AC adaptor or a genuine Panasonic AC adaptor (VW-AD21E-K; optional).
- When removing the AC adaptor, be sure to hold down the power button until the status indicator goes off. Then remove the AC adaptor.

Preparation of SD cards

This unit (an SDHC compatible device) is compatible with both SD Memory Cards and SDHC Memory Cards. When using an SDHC Memory Card on another device, confirm that the device supports the SDHC Memory Card.

Cards that you can use with this unit

Use SD cards conforming to Class 4 or higher of the SD Speed Class Rating* for motion picture recording.

Card type	Capacity	Motion picture recording The following models of Panasonic SD cards can be used.	Still picture recording
SD Memory Card	8 MB 16 MB	Cannot be used.	Can be used.
	32 MB 64 MB 128 MB 256 MB 512 MB	Cannot be guaranteed in operation. The recording may suddenly stop during motion picture recording depending on the SD card you use.	
	1 GB	RP-SDV01G	
	2 GB	RP-SDV02G, RP-SDM02G, RP-SDP02G	
	SDHC Memory Card	4 GB	
6 GB		RP-SDM06G	
8 GB		RP-SDV08G, RP-SDW08G, RP-SDP08G	
12 GB		RP-SDM12G, RP-SDP12G	
16 GB		RP-SDV16G, RP-SDW16G, RP-SDP16G	
32 GB		RP-SDV32G, RP-SDW32G	

* The SD Speed Class Rating is the speed standard for successive writes.

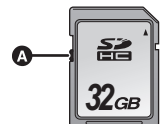
- Please confirm the latest information about SD Memory Cards/SDHC Memory Cards that can be used for motion picture recording on the following website.

http://panasonic.jp/support/global/cs/e_cam
(This website is in English only.)

- 4 GB or more Memory Cards that do not have the SDHC logo are not based on SD Memory Card Specifications.

- When the write-protect switch **A** on SD card is locked, no recording, deletion or editing will be possible on the card.

- Keep the Memory Card out of reach of children to prevent swallowing.

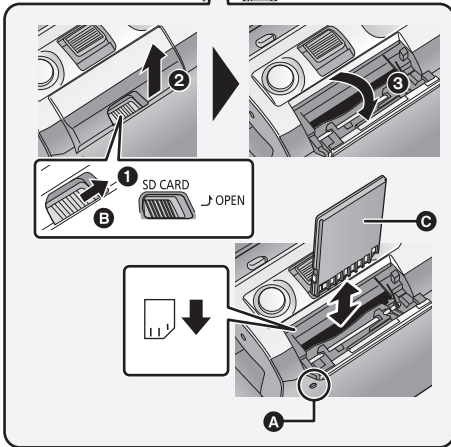
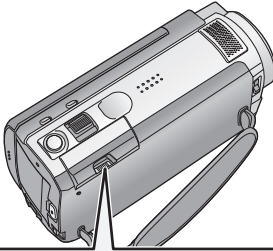


Inserting/removing an SD card

When using an SD card not from Panasonic, or one previously used on other equipment, for the first time on this unit, format the SD card. (→ 29) When the SD card is formatted, all of the recorded data is deleted. Once the data is deleted, it cannot be restored. Copy valuable data onto a PC, DVD disc etc. before proceeding with the formatting.

Caution:

When the SD card is removed while the access lamp is lit, this unit may malfunction or the data recorded on the SD card may be lost.



Access lamp [ACCESS] **A**

- When this unit is accessing the SD card or built-in memory, the access lamp lights up.

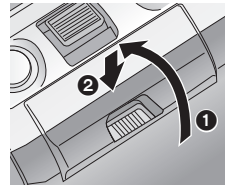
1 Open the SD card cover by sliding the OPEN lever **B**.

- While sliding the lever, push up on the SD card cover to open.

2 Insert/remove the SD card.

- Face the terminal side **C** in the direction shown in the illustration and press it straight in as far as it will go.
- Press the centre of the SD card and then pull it straight out.

3 Return the SD card cover to its original position and press down to close.



- Securely close it until it clicks.

- Do not touch the terminals on the back of the SD card.
- Do not apply strong shocks, bend, or drop the SD card.
- Electrical noise, static electricity or the failure of this unit or the SD card may damage or erase the data stored on the SD card.
- When the card access lamp is lit, do not:
 - Remove the SD card
 - Turn the unit off
 - Insert and remove the USB cable
 - Expose the unit to vibrations or shockPerforming the above while the lamp is on may result in damage to data/SD card or this unit.

- Do not expose the terminals of the SD card to water, garbage or dust.
- Do not place SD cards in the following areas:
 - In direct sunlight.
 - In very dusty or humid areas.
 - Near a heater.
 - Locations susceptible to significant difference in temperature (condensation can occur).
 - Where static electricity or electromagnetic waves occur.
- To protect SD cards, return them to their cases when you are not using them.

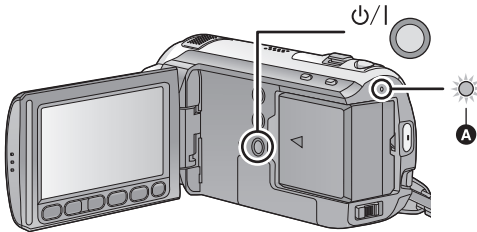
3

Turning the unit on/off

You can turn the power on and off using the power button or by opening and closing the LCD monitor.

Turning the power on and off with the power button

Press the power button to turn on the power.

**To turn off the power**

Hold down the power button until the status indicator goes off.

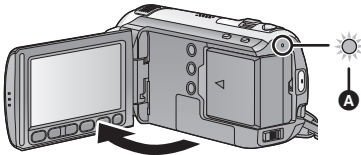
A The status indicator lights.

Turning the power on and off with the LCD monitor

Power is turned on when the LCD monitor is opened, and power is turned off when it is closed.

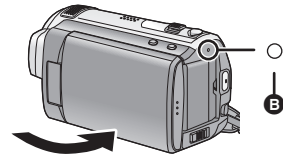
During normal use, opening and closing of the LCD monitor can be conveniently used to turn the power on/off.

■ **To turn on the power**



A The status indicator lights.

■ **To turn off the power**



B The status indicator goes off.

In the following cases, opening the LCD monitor does not turn on the power. Press the power button to turn on the power.



- When the unit is purchased
- When you have turned off the power using the power button

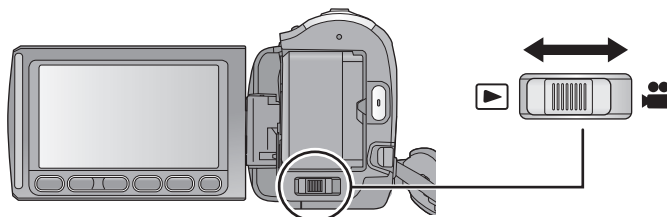
When not using the unit, turn off the power using the power button.



4

Selecting a mode

Change the mode to recording or playback.

Operate the mode switch to change the mode to  or .



	Recording mode (→ 22, 23)
	Playback mode (→ 26, 27)

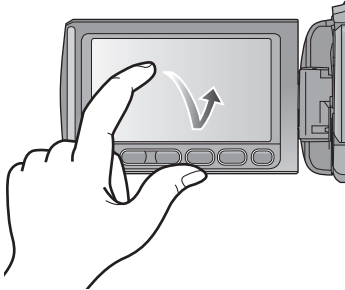
How to use the touch screen

You can operate by directly touching the LCD monitor (touch screen) with your finger.

It is easier to use the stylus pen (supplied) for detailed operation or if it is hard to operate with your fingers.

■ Touch

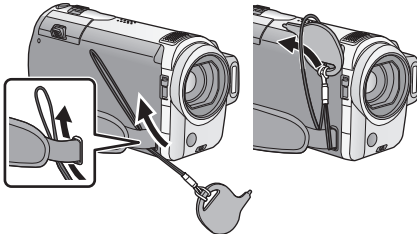
Touch and release the touch screen to select icon or picture.



- Touch the centre of the icon.
- Touching the touch screen will not operate while you are touching another part of the touch screen.

■ About the Stylus pen

The stylus pen (supplied) can be stored on the unit as shown when it is not being used. Remove the stylus pen from the unit when it is to be used.

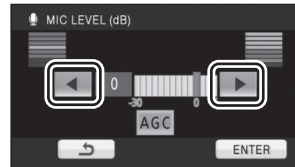
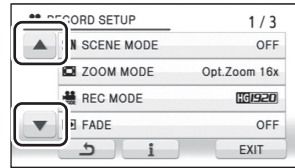


- Only use the supplied stylus pen.
- Do not tuck the stylus pen with the LCD monitor.

■ About the operation icons

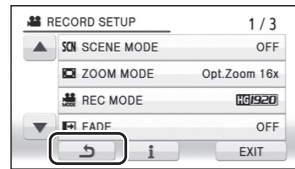
▲ / ▼ / ◀ / ▶ :

These icons are used to switch the menu and thumbnail display page, for item selection and setting etc.



↶ :

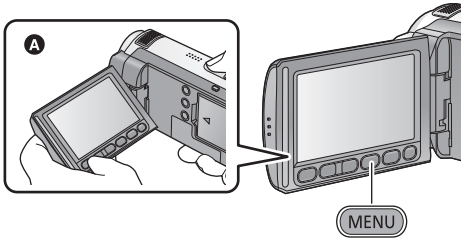
Touch to return to the previous screen such as when setting menus



- Wipe the LCD monitor with a soft cloth, such as eye glass cleaner, when it gets dirty with finger prints and others.
- Do not touch the LCD monitor with hard pointed tips, such as ball point pens.
- Do not touch the LCD monitor with your finger nails, or rub or press with strong force.
- It may become hard to see or hard to recognise the touch when the LCD protection sheet is affixed.
- Perform the touch screen calibration when the touch is not recognised or wrong location is recognised.

6

Using the menu screen

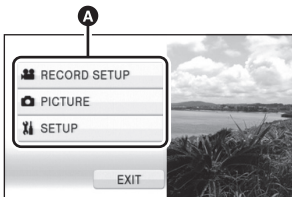


A It is recommended to hold the LCD monitor with your thumb and index finger when pressing the buttons on the LCD monitor.

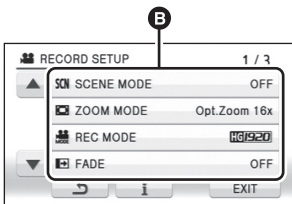
1 Press the MENU button.



2 Touch the top menu **A**.



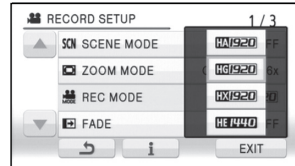
3 Touch the submenu **B**.



• Next (previous) page can be displayed by touching / .

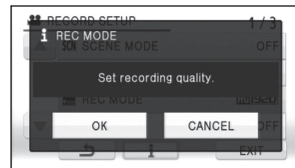
• Information display setting is completed when is surrounded by yellow after touching it.

4 Touch the desired item to enter the setting.



5 Touch [EXIT] or press the MENU button to exit the menu setting.

■ About information display setting



An explanation or setting confirmation message of the submenu or item being touched gets displayed in step 3 and 4. Touch the to cancel the information display setting.

Language selection


You can select the language on the screen display and the menu screen.

1 Press the MENU button, then touch [SETUP] → [LANGUAGE].

2 Touch [English].

Setting date and time

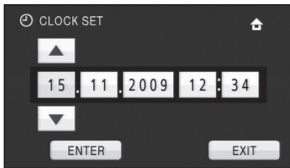
When the unit is turned on for the first time, a message asking you to set the date and time will appear. Select [YES] and perform steps 2 to 3 below to set the date and time.



◇ Change the mode to  .

1 Select the menu. (→ 19)

[SETUP] → [CLOCK SET] → [YES]

2 Touch the date or time to be set, then set the desired value using / .



- The year will change as follows: 2000, 2001, ..., 2039, 2000, ...
- The 24-hour system is used to display the time.
-  appears on the right top of the screen when [SET WORLD TIME] is set to [HOME], while  appears when it is set to [DESTINATION].

3 Touch [ENTER].

- The clock function starts at [00] seconds.
- A message prompting for World time setting may be displayed. Perform the World time setting by touching the screen.
- Touch [EXIT] or press the MENU button to complete the setting.

Changing the date and time display mode

Select the menu. (→ 19)

[SETUP] → [DATE/TIME] → desired display style

[DATE]

15. 11. 2009

[D/T]

12:34
15. 11. 2009

[OFF]

[- -]

- The date and time disappear from the screen after being displayed for a few seconds.

Changing the date format

Select the menu. (→ 19)

[SETUP] → [DATE FORMAT] → desired display style

Display style	Screen display
[Y/M/D]	2009. 11. 15
[M/D/Y]	11 15 2009
[D/M/Y]	15. 11. 2009

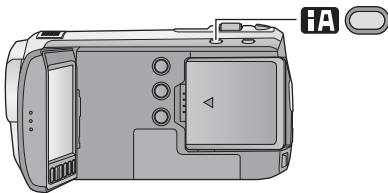
- The date and time function is driven by a built-in lithium battery.
- If the time display becomes [- -], the built-in lithium battery needs to be charged. To recharge the built-in lithium battery, connect the AC adaptor or attach the battery to this unit. Leave the unit as it is for approx. 24 hours and the battery will maintain the date and time for approx. 6 months. (The battery is still being recharged even if the power is off.)

Before recording

Intelligent auto mode







The following modes appropriate for the condition are set just by pointing the unit to what you want to record.




- When this unit is purchased, the Intelligent auto mode is set to on.



Intelligent auto button

Press this button to switch on/off the intelligent auto mode.

Mode	Scene/Effect
 Portrait 	When the object is a person <hr/> Faces are detected and focused automatically, and the brightness is adjusted so it is recorded clearly.
 Scenery 	Recording outdoors <hr/> The whole landscape will be recorded vividly without whiting out the background sky, which may be very bright.
 Spotlight 	Under a spotlight <hr/> Very bright object is recorded clearly.

Mode	Scene/Effect
 Low light 	Dark room or twilight <hr/> It can record very clearly even in a dark room or twilight.
 Normal	Other situations <hr/> Contrast is adjusted automatically for clear image.

- Modes are selected automatically by the unit, so it may not choose desired mode depending on the recording conditions.
- Brightness may change suddenly or flicker when set to on.
- In the portrait mode, one that is bigger and close to centre of the screen will be surrounded by an orange frame.
- Optical image stabilizer function (→ 25) is set to Active mode/ON in all modes.
- The setting of microphone level is fixed to [AUTO]
- In the following case, faces may not be detected in some recording conditions.
 - Faces are not full-faces
 - Faces tilt
 - Faces are not completely exposed (for instance wearing sunglasses)
 - The size of a face is small on the screen.
 - When the digital zoom is used
- The function may not operate properly in some recording conditions, even if faces are detected.

■ When Intelligent auto mode is set to off:

When the Intelligent auto mode is set to off, the auto white balance and auto focus operate and automatically adjust the colour balance and focusing. Depending on the brightness of the subject etc., the aperture and shutter speed are automatically adjusted for an optimum brightness.

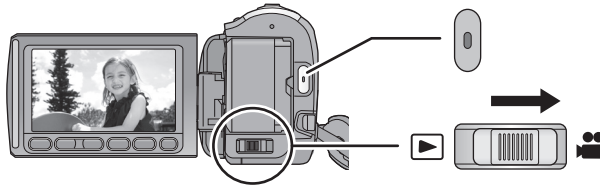
- Colour balance and focus may not be adjusted automatically depending on light sources or scenes. If so, manually adjust these settings.

Recording motion pictures

VIDEO

This unit records high definition images that are compatible with the AVCHD format.

- Use an SD card that can be used for motion picture recording. (→ 14)
- Open the lens cover before turning on the power. (→ 8)



HDC-TM10 :

■ **When selecting media**

Select the menu. (→ 19)

[MEDIA SELECT] → [Built-in Memory] or [SD CARD]

1 Change the mode to .

2 Open the LCD monitor.

You cannot start recording while the LCD monitor is closed.

- For users who have **HDC-SD10** , proceed to step 4.

3 **HDC-TM10**

Select the media to record from the menu.

Select whether to record motion pictures to the SD card or the built-in memory.

- You cannot set the recording media for motion pictures and still pictures separately.

4 Press the recording start/stop button to start recording.



- While recording is in progress, the recording will not stop even if the LCD monitor is closed.

5 Press the recording start/stop button again to pause recording.

■ **Screen indications in the recording mode**



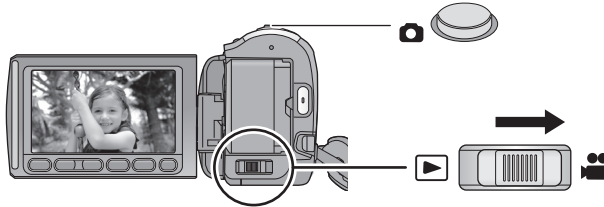
- A** Recording mode
- B** Remaining time left for recording (When the remaining time is less than 1 minute, [R 0h00m] flashes red.)
- C** Recording time elapsed Each time the unit is put into recording pause, the counter display will be reset to "0h00m00s".

Recording still pictures

PHOTO

The number of pixels recorded for still pictures is [2.1M] 1920×1080] (16:9). Still pictures can also be recorded while recording motion pictures.

- Open the lens cover before turning on the power. (→ 8)



1 Change the mode to .

2 Open the LCD monitor.

- For users who have [HDC-SD10], proceed to step 4.

3 [HDC-TM10]

Select the media to record from the menu. (→ 22)

Select whether to record still pictures to the SD card or the built-in memory.

- You cannot set the recording media for motion pictures and still pictures separately.


4 Press the button halfway. (For auto focus only)

Focus indication appears and the unit focuses on the subject automatically.



- If you set the optical image stabilizer function (→ 25) to Active mode/ON, then the image stabilizer function will be more effective. ([MEGA] (MEGA optical image stabilizer) will be displayed.)









5 Press the button fully.

- In order to take better still pictures, the screen will brighten when the  button is fully pressed.



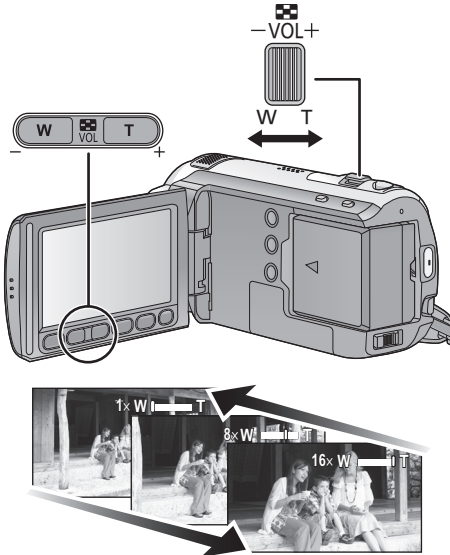
■ About the screen indications when the button is pressed



- : Flash
- : Flash level
- : Red eye reduction
- : Quality of still pictures
- : Size of still pictures
- R3000: Remaining number of still pictures (Flashes in red when [0] appears.)
- : Still picture operation indicator
- : MEGA optical image stabilizer
- : Optical image stabilizer (→ 25)

The maximum optical zoom ratio is 16×.

◇ **Change the mode to**  .



Zoom lever/Adjust zoom buttons

T side:

Close-up recording (zoom in)

W side:

Wide-angle recording (zoom out)

- The zoom speed varies depending on the range over which the zoom lever is moved.
- The adjust zoom buttons are useful for making fine adjustments to the zoom magnification.

Zoom mode

VIDEO **PHOTO**

Set the maximum optical zoom ratio. If the zoom magnification exceeds 16×, then the digital zoom function will be activated.

Select the menu. (→ 19)

[RECORD SETUP] → [ZOOM MODE] → desired setting

[Opt.Zoom 16×]:

Optical zoom (Up to 16×)

[D.Zoom 40×]:

Digital zoom (Up to 40×)

[D.Zoom 1000×]:

Digital zoom (Up to 1000×)

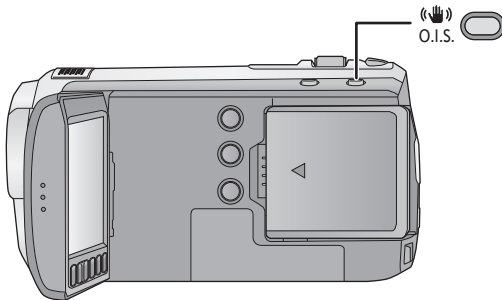
- This function's default setting is [Opt.Zoom 16×].
 - The larger the digital zoom magnification, the more the image quality is degraded.
-
- If you take your finger off the zoom lever during zoom operation, the operation sound may be recorded. When returning the zoom lever to the original position, move it quietly.
 - When the zoom magnification is 16×, the subjects are focused at about 1.2 m or more.
 - When the zoom magnification is 1×, this unit can focus on a subject approx. 4 cm away from the lens. (Macro function)
 - The zoom speed does not vary when operating with the adjust zoom button.

Optical image stabilizer function

VIDEO PHOTO

Optical image stabilizer can stabilize the image without decreasing the image quality as much.

◇ Change the mode to  .




Optical image stabilizer button


Pressing the button changes the optical image stabilizer setting.

 →  → OFF

- Set the Intelligent Auto mode to off before setting the Optical Image Stabilizer function to off.



: **Active mode**

This setting gives more stabilization and is suitable for recording when moving.

: **ON**

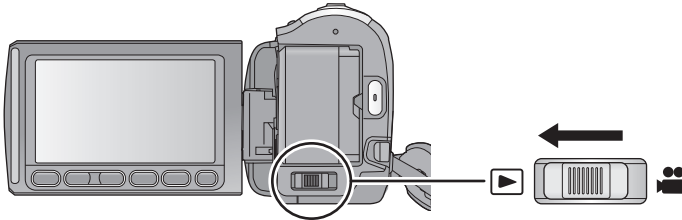
This setting is suitable for recording in a stable state such as scenery.

O.I.S.: Optical Image Stabilizer


- This function's default setting is  (Active mode).
- When recording using the tripod, it is recommended to set to  (ON).
- Stabilization may not be possible under strong shaking.

Motion picture playback

VIDEO



1 Change the mode to .

2 Touch the play mode select icon  to select desired media to be played back.





- Touch [VIDEO/SD CARD] to play back the SD card.

HDC-TM10

Touch [VIDEO/Built-in Memory] to play back the built-in memory.



3 Touch the scene to be played back.



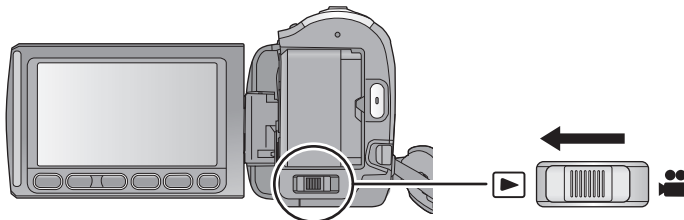
- Next (previous) page can be displayed by touching /.

4 Select the playback operation by touching the operation icon.



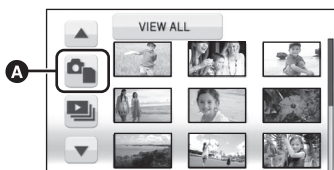
- ▶/||: Playback/Pause
- ◀◀: Rewind playback
- ▶▶: Fast forward playback
- : Stops the playback and shows the thumbnails.
- ▶: Displays the direct playback bar.
- Touch / to display/not-display the operation icon.

PHOTO



1 Change the mode to .

2 Touch the play mode select icon to select desired media to be played back.





- Touch [PICTURE/SD CARD] to play back the SD card.
(HDC-TM10)
Touch [PICTURE/Built-in Memory] to play back the built-in memory.

3 Touch the still picture to be played back.





The selected still picture is played back on the full screen, and the operation icon is automatically displayed on the screen.

- Next (previous) page can be displayed by touching /.

4 Select the playback operation by touching the operation icon.



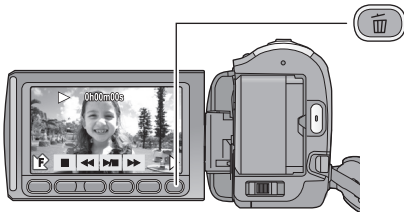
- ▶/||: Slide show (playback of the still pictures in numerical order) start/pause.
- ◀|||: Plays back the previous picture.
- |||▶: Plays back the next picture.
- : Stops the playback and shows the thumbnails.
- Touch / to display/not-display the operation icon.

Deleting scenes/still pictures


VIDEO PHOTO

Deleted scenes/still pictures cannot be restored, so perform appropriate confirmation of the contents before proceeding with deletion.

◇ Change the mode to  .



To delete by confirming images being played back

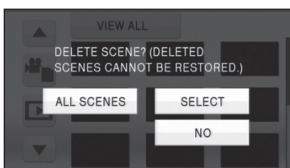
Press the  button while scenes or still pictures to be deleted are being played back.

- When the confirmation message appears, touch [YES].

■ Deleting multiple scenes/still pictures from the thumbnail display

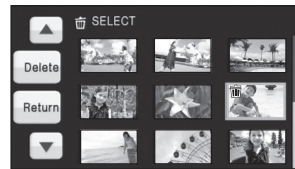
1 Press the  button while the thumbnail view screen is displayed.


2 Touch [SELECT] or [ALL SCENES].




- When [ALL SCENES] is selected, all the scenes or still pictures on the selected media will be deleted. When the confirmation message appears, touch [YES]. (In case of playing back scenes or still pictures by date, all the scenes or still pictures on the selected date will be deleted.)
- Protected scenes/still pictures cannot be deleted.

3 (Only when [SELECT] is selected in step 2)
Touch the scene/still picture to be deleted.



- When touched, the scene/still picture is selected and the  indication appears on the thumbnails. Touch the scene/still picture again to cancel the operation.
- Up to 99 scenes can be selected to be deleted.

4 (Only when [SELECT] is selected in step 2)
Touch [Delete] or press the  button.

- When the confirmation message appears, touch [YES].

(Only when [SELECT] is selected in step 2)

To continue deleting other scenes

Repeat steps 3-4.

When you stop deleting halfway


Touch [CANCEL] or press the MENU button while deleting.

- The scenes or still pictures that have already been deleted when the deletion is cancelled cannot be restored.

To complete editing

Press the MENU button.

Please be aware that if a medium is formatted, then all the data recorded on the medium will be erased and cannot be restored. Back up important data on a PC, DVD disc etc.

- ◇ Change the mode to  or , and select desired media to be formatted. (→ 22, 26, 27)

Select the menu. (→ 19)

Formatting SD cards

[SETUP] → [FORMAT CARD] → [YES]

HDC-TM10

Formatting Built-in memory

[SETUP] → [FORMAT Built-in Memory] → [YES]

- When the confirmation message appears, touch [YES].
- When formatting is complete, touch [EXIT] to exit the message screen.

HDC-TM10

- Perform a physical formatting of the built-in memory when this unit is to be disposed/transferred. (Refer to the Operation Instructions (PDF format))

- Do not turn this unit off or remove the SD card, while formatting. Do not expose the unit to vibrations or shock.

Use this unit to format media.

Formatting built-in memory is only available with this unit.

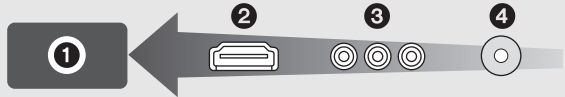
Do not format an SD card using any other equipment such as a PC. The card may not be used on this unit.

1

Watching Video/Pictures on your TV

VIDEO PHOTO

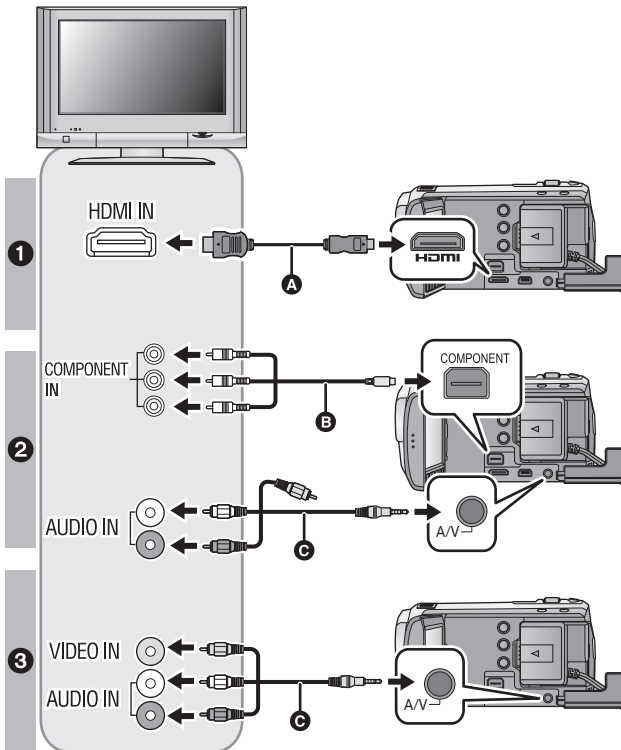
Confirm the terminals on your TV and use a cable compatible with the terminals. Image quality may vary with the connected terminals.



- ① High quality
- ② HDMI terminal
- ③ Component terminal
- ④ Video terminal

- Use the supplied component cable and AV cable. Use of the following Panasonic HDMI mini cables is recommended to connect the unit to the HDMI terminal.
- Do not simultaneously connect an HDMI mini cable and Component cable to this unit.

1 Connect this unit to a TV.



- A** HDMI mini cable (optional)
- B** Component cable (supplied)
- C** AV cable (supplied)

Picture quality

- ① High definition images when connecting to HDMI terminal
- ② High definition images when connecting to component terminal compatible with 1080i Standard images when connecting to component terminal compatible with 576i
- ③ Standard images when connecting to video terminal

- Check that the plugs are inserted as far as they go.
- Do not use any other cables except a genuine Panasonic HDMI mini cable (RP-CDHM15, RP-CDHM30; optional).
- Do not use any other component cables except the supplied one.
- The component terminal is for outputting images only so be sure to also connect the AV cable. (It is not necessary to connect the yellow plug.)
- Do not use any other AV cables except the supplied one.

2 Select the video input on the TV.

- Example:
 Select the [HDMI] channel with a HDMI mini cable.
 Select the [Component] channel with a component cable.
 Select the [Video 2] channel with an AV cable.
 (The name of the channel may differ depending on the connected TV.)

3 Change the mode to to play back.

- The image and audio are output on the TV.

Cables	Reference items
A HDMI mini cable (optional)	<ul style="list-style-type: none"> • Connecting with a HDMI mini cable • Playback using VIERA Link (HDAVI Control™)
B Component cable (supplied)	<ul style="list-style-type: none"> • Connecting with the component cable

If the image or audio from this unit does not appear on the TV

- Check that the plugs are inserted as far as they go.
- Check the connections.
- **Check the input setting (input switch) and the audio input setting on the TV. (For more information, please read the operating instructions for the TV.)**
- **Check the setting of the unit.**

Specifications

High Definition Video Camera

Information for your safety

Power source:	DC 9.3 V (When using AC adaptor) DC 7.2 V (When using battery)
Power consumption:	Recording: <div style="border: 1px solid black; padding: 2px; display: inline-block;">HDC-SD10</div> 5.5 W <div style="border: 1px solid black; padding: 2px; display: inline-block;">HDC-TM10</div> 5.6 W

	HDC-SD10	HDC-TM10
Signal system	1080/50i	
Recording format	AVCHD format compliant	
Image sensor	1/6" 1MOS image sensor Total: 1470 K Effective pixels: Motion picture: 1170 K Still picture: 1170 K	
Lens	Auto Iris, F1.8 to F2.8 Focal length: 2.95 mm to 47.2 mm Macro (Full range AF) 35 mm equivalent: Motion picture/Still picture: 44.1 mm to 706 mm (16:9) Minimum focus distance Normal: approx. 4 cm (Wide)/approx. 1.2 m (Tele) Tele macro: approx. 50 cm (Tele)	
Filter diameter	30.5 mm	
Zoom	16× optical zoom, 40×/1000× digital zoom	
Monitor	2.7" wide LCD monitor (approx. 230 K pixels)	
Microphone	Stereo (with a zoom microphone)	
Speaker	1 round speaker, dynamic type	
White balance adjustment	Auto tracking white balance system	
Standard illumination	1,400 lx	
Minimum required illumination	Approx. 9 lx (1/25 in low light mode) Approx. 1 lx with the colour night view function	

		HDC-SD10	HDC-TM10
AV terminal video output level		1.0 Vp-p, 75 Ω, PAL system	
Component terminal video output level		Y: 1.0 Vp-p, 75 Ω Pb: 0.7 Vp-p, 75 Ω Pr: 0.7 Vp-p, 75 Ω	
HDMI mini connector video output level		HDMI™ (x.v.Colour™) 1080i/576p	
AV terminal audio output level (Line)		316 mV, 600 Ω, 2 ch	
HDMI mini connector audio output		2 ch (Linear PCM)	
USB	SD card	Read only (No copyright protection support)	
	Built-in memory	–	Read only
		Hi-Speed USB (USB 2.0), USB terminal Type Mini AB PictBridge-compliant	
Flash		Available range: Approx. 1.0 m to 2.5 m	
Dimensions		47.5 mm (W)×63 mm (H)×114.5 mm (D) (excluding projecting parts)	
Mass		Approx. 227 g [without battery (supplied) and an SD card (optional)]	Approx. 227 g [without battery (supplied)]
Mass in operation		Approx. 278 g [with battery (supplied) and an SD card (optional)]	Approx. 278 g [with battery (supplied)]
Operating temperature		0 °C to 40 °C	
Operating humidity		10% to 80%	
Battery operation time		See page 12	

Motion pictures

		HDC-SD10	HDC-TM10
Recording media	SD card	SD Memory Card: 1 GB, 2 GB (FAT12 and FAT16 system compliant) SDHC Memory Card: 4 GB, 6 GB, 8 GB, 12 GB, 16 GB, 32 GB (FAT32 system compliant)	
	Built-in memory	–	8 GB
Compression		MPEG-4 AVC/H.264	
Recording mode and transfer rate		HA: Approx. 17 Mbps (VBR) HG: Approx. 13 Mbps (VBR) HX: Approx. 9 Mbps (VBR) HE: Approx. 6 Mbps (VBR)	

	HDC-SD10	HDC-TM10
Picture size	HA/HG/HX: 1920×1080/50i HE: 1440×1080/50i	
Audio compression	Dolby Digital/2 ch	

Still pictures

		HDC-SD10	HDC-TM10
Recording media	SD card	SD Memory Card: 8 MB, 16 MB, 32 MB, 64 MB, 128 MB, 256 MB, 512 MB, 1 GB, 2 GB (FAT12 and FAT16 system corresponding) SDHC Memory Card: 4 GB, 6 GB, 8 GB, 12 GB, 16 GB, 32 GB (FAT32 system compliant)	
	Built-in memory	–	8 GB
Compression		JPEG (Design rule for Camera File system, based on Exif 2.2 standard), DPOF corresponding	
Picture size		1920×1080	

AC adaptor

Information for your safety

Power source:	AC 110 V to 240 V, 50/60 Hz
Power consumption:	19 W
DC output:	DC 9.3 V, 1.2 A (Unit operation) DC 8.4 V, 0.65 A (Battery charging)

Dimensions	92 mm (W)×33 mm (H)×61 mm (D)
Mass	Approx. 115 g

Specifications may change without prior notice.

Reading the Operating Instructions (PDF format)

- You have practised the basic operations introduced in these operating instructions and want to progress to advanced operations.
- You want to check the Troubleshooting.

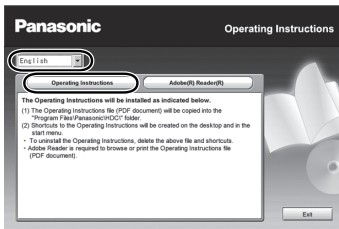
In these kinds of situations refer to Operating Instructions (PDF format) recorded on the CD-ROM containing the Operating Instructions (supplied).

■ For Windows

1 Turn the PC on and insert the CD-ROM containing the Operating Instructions (supplied).

2 Select the desired language and then click [Operating Instructions] to install.

(Example: When an English language OS)



3 Double click the “SD10_TM10 Operating Instructions” shortcut icon on the desktop.

■ When the Operating Instructions (PDF format) will not open

You will need Adobe Acrobat Reader 4.0 or later or Adobe Reader 6.0 or later to browse or print the Operating Instructions (PDF format).

Download and install a version of Adobe Reader that you can use with your OS from the following Web Site.

http://www.adobe.com/products/acrobat/readstep2_allversions.html

If using the following OS

- Windows 2000 SP4
- Windows XP SP2/SP3
- Windows Vista and SP1

Insert the CD-ROM containing the Operating Instructions (supplied), click [Adobe(R) Reader(R)] and then follow the messages on the screen to install.

■ To uninstall the Operating Instructions (PDF format)

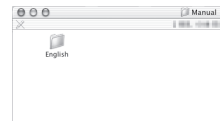
Delete the PDF file from the “Program Files\Panasonic\HDC\” folder.

- When the contents in the Program Files folder cannot be displayed, click the [Show the contents of this folder] to display them.

■ For Mac

1 Turn the PC on and insert the CD-ROM containing the Operating Instructions (supplied).

2 Open the “Manual” folder in “VFF0513” and then copy the PDF file with the desired language inside the folder.



3 Double click the PDF file to open it.

EU



Panasonic Corporation

Web site: <http://panasonic.net>

Pursuant to at the directive 2004/108/EC, article 9(2)

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